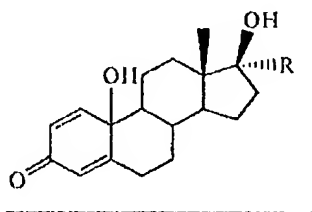


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Docket No. UF-300XC2
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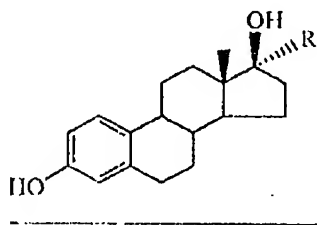
This listing of claims will replace all prior versions and listings of claims in this application.

1 (Currently Amended). A method for providing estrogen replacement therapy to a patient while minimizing undesirable side effects associated with estrogen treatment or therapy, wherein said method comprises administering to the patient an effective amount of a quinol that is converted to a biologically active estrogen compound *in vivo*, wherein the quinol has the general structure:



wherein R is selected from the group consisting of H and ethynyl.

2 (Currently Amended). The method according to claim 1, wherein the quinol is converted to [[the]]a biologically active estrogen compound having the general structure



wherein the quinol is converted to the biologically active estrogen compound via enzyme-catalyzed reduction.

3 (Original). The method according to claim 2, wherein the enzyme catalyzed reduction occurs with NADH as a reducing agent.

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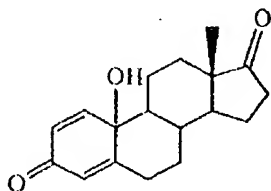
4 (Original). The method according to claim 2, wherein the enzyme catalyzed reduction occurs with NADPH as a reducing agent.

5 (Original). The method according to claim 1, wherein the undesirable side effect is excessive estrogenic uterine tissue stimulation.

6 (Original). The method according to claim 1, wherein the undesirable side effect is excessive estrogenic breast tissue stimulation.

7 (Canceled).

8 (Original). The method according to claim 1, further comprising administering the quinol by a route selected from the group consisting of oral, buccal, intramuscular, transdermal, intravenous, and subcutaneous.



9 (Canceled).

10 (Currently Amended). The method according to claim 1, wherein the biologically active estrogen compounds are provided to the patient for the treatment ~~or prevention~~ of symptoms, diseases, or conditions associated with menopause, wherein the symptoms, diseases, or conditions associated with menopause is any one or more selected from the group consisting of: irregular period, hot flashes, increased risk of vaginal and/or bladder infection, urge incontinence, stress

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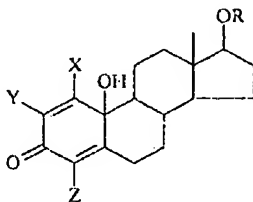
incontinence, fatigue, depression, loss of muscle mass, increased fat tissue, thinning and loss of skin elasticity, loss of bone tissue, and impaired cognition.

11 (Currently Amended). The method according to claim 1[[0]], wherein the biologically active estrogen compounds are provided to the patient for the treatment ~~or prevention~~ of conditions associated with the bone, wherein the conditions associated with the bone is any one or more selected from the group consisting of: osteoporosis, osteomyelitis, ischemic bone disease, fibrous dysplasia, rickets, Cushing's syndrome and osteoarthritis.

12 (Currently Amended). The method according to claim 1[[0]], wherein the biologically active estrogen compounds are provided to the patient for treatment ~~or prevention~~ of conditions associated with heart disease, wherein the conditions associated with heart disease is any one or more selected from the group consisting of: stroke, cardiac ischemia, myocardial infarction, chronic or acute heart failure, cardiac dysrhythmias, atrial fibrillation, paroxysmal tachycardia, ventricular fibrillation and congestive heart failure.

13 (Canceled).

14 (Currently Amended). A quinol that is converted to a biologically active estrogen compound via enzyme catalyzed reduction, said quinol having the general structure



wherein

R is selected from the group consisting of H, alkyl, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and alkylaryl;

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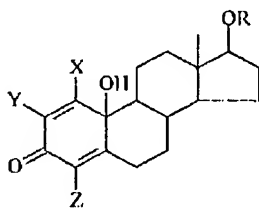
X is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain;

Y is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain; and

Z is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain.

15-19 (Canceled).

20 (Currently Amended). A pharmaceutical composition comprising a quinol that is converted to a biologically active estrogen compound via enzyme catalyzed reduction, wherein said composition further comprises a pharmaceutically acceptable carrier, wherein said quinol has the general structure:



wherein

R is selected from the group consisting of H, alkyl, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and alkylaryl;

X is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl,

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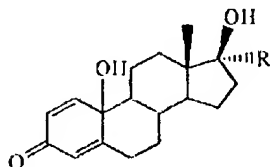
and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain;

Y is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain; and

Z is selected from the group consisting of hydrogen, halogen, isopropyl, alkyl, alkenyl, alkynyl, carbocycle, cycloalkyl, aryl, heterocycle, heteroaryl, alkylamino, hydroxyalkyl, alkoxyalkyl, and a linear or branched hydrocarbon from 1-15 atoms carbon atoms in length, that can optionally include one or more heteroatoms in the chain.

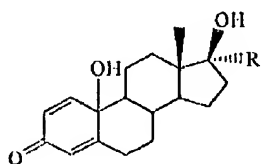
21-25 (Canceled).

26 (New). A quinol having the general structure



wherein R is ethynyl.

27 (New). A pharmaceutical composition comprising a quinol that is converted to a biologically active estrogen compound via enzyme catalyzed reduction, wherein said composition further comprises a pharmaceutically acceptable carrier, wherein said quinol has the structure:



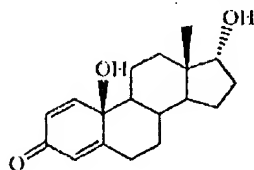
wherein R is ethynyl.

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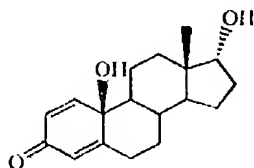
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28 (New). A quinol having the structure



29 (New). A pharmaceutical composition comprising a quinol that is converted to a biologically active estrogen compound via enzyme catalyzed reduction, wherein said composition further comprises a pharmaceutically acceptable carrier, wherein said quinol has the structure:



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